

GLACIERS

SNOW is a form of precipitation in the form of crystalline water ice, consisting of snowflakes that fall from clouds. It has an open and therefore soft structure, unless packed by pressure. Snowflakes come in a variety of sizes and shapes.



A **GLACIER** (UK /'glæsiə/ GLASS-ee-ər or US /'gleɪʃər/ GLAY-shər) is a large persistent body of ice that forms where the accumulation of snow exceeds its ablation (melting) over many years, often centuries. At least 0.1km² in area and 50 m thick, but often much larger, a glacier slowly deforms and flows due to stresses induced by its weight. Crevasses, seracs, and other distinguishing features of a glacier are due to its flow. Another consequence of glacier flow is the transport of rock and debris abraded from its substrate and resultant landforms like cirques and moraines. Glaciers form on land, often elevated, and are distinct from the much thinner sea ice and lake ice that form on the surface of bodies of water.

On Earth, 99% of glacial ice is contained within vast ice sheets in the polar regions, but glaciers may be found in mountain ranges of every continent, and on a few high-latitude oceanic islands.

CATEGORIES.

- **ALPINE GLACIERS** form on the crests and slopes of mountains and are also known as "**MOUNTAIN GLACIERS**" or "cirque glaciers". An alpine glacier that fills a valley is sometimes called a **VALLEY GLACIER**.
- Larger glaciers that cover an entire mountain, mountain range, or volcano are known as an **ICE CAP OR ICE FIELD**. Ice caps feed outlet glaciers, tongues of ice that extend into valleys far below the margins of the larger ice size
- The largest glacial bodies, **ICE SHEETS** or continental glaciers, cover more than 50,000 km². The only ice sheets are the two that cover most of Antarctica and Greenland. These regions contain vast quantities of fresh water. The volume of ice is so large that **if the Greenland ice sheet melted, it would cause sea levels to rise six metres (20 ft) all around the world. If the Antarctic ice sheet melted, sea levels would rise up to 65 metres**

A **CIRQUE** is a landform found among mountains as a result of alpine glaciers. They may be up to a square kilometre in size, situated high on a mountainside near the firn line, and typically are partially surrounded on three sides by steep cliffs.

If two adjacent cirques erode toward one another, an **ARÊTE, OR STEEP SIDED RIDGE**, forms.

When three or more cirques erode toward one another, a **PYRAMIDAL PEAK OR HORN** is created. The Matterhorn in the European Alps is an example of such a peak.

GLACIAL VALLEYS

Before glaciation, mountain valleys have a characteristic "V" shape, produced by downward erosion by water. However, during glaciation, these valleys widen and deepen, forming a "**U**"-**SHAPED GLACIAL VALLEY**. Besides the deepening and widening of the valley, the glacier also smooths the valley due to erosion.

Many glaciers deepen their valleys more than their smaller tributaries. Therefore, when the glaciers recede from the region, the valleys of the tributary glaciers remain above the main glacier's depression, and these are called hanging valleys.

A **MORaine** is any glacially formed accumulation of unconsolidated glacial debris (soil and rock) which can occur in currently glaciated and formerly glaciated regions, such as those areas acted upon by a past glacial maximum. Moraines may be composed of debris ranging in size from silt-sized glacial flour to large boulders. The debris is typically sub-angular in shape

Lateral moraines: Lateral moraines are parallel ridges of debris deposited along the sides of a glacier.

Ground moraines: Ground moraines are till¹ covered areas

End moraines, or terminal moraines, are ridges of unconsolidated debris deposited at the end of the glacier.

Terminal moraines are one of the most prominent types of moraines in the Arctic. One famous terminal moraine is the Giant's Wall in Norway which, according to legend, was built by giants to keep intruders out of their realm

Medial moraine. A medial moraine is a ridge of moraine that runs down the center of a valley floor. It is formed when two glaciers meet and the debris on the edges of the adjacent valley sides join and are carried on top of the enlarged glacier.

A **TARN** (or corrie loch) is a mountain lake or pool, formed in a cirque excavated by a glacier. It is formed when either rain or river water fills the cirque. A moraine may form a natural dam below a tarn

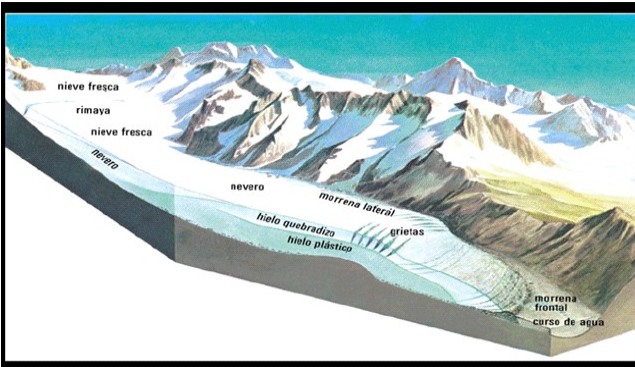
¹Till or glacial till is unsorted glacial sediment. Glacial drift is a general term for the coarsely graded and extremely heterogeneous sediments of glacial origin



Nieve



Glaciar



Glaciar alpino



Casquete glaciar



Circo glaciar

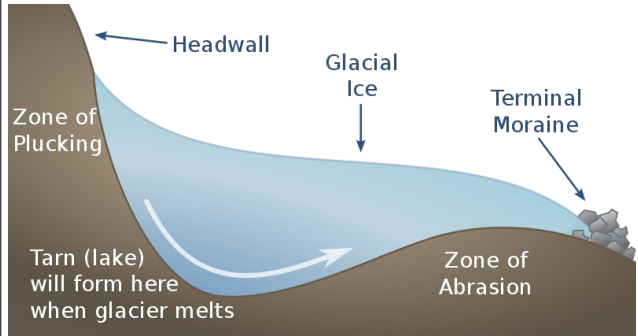
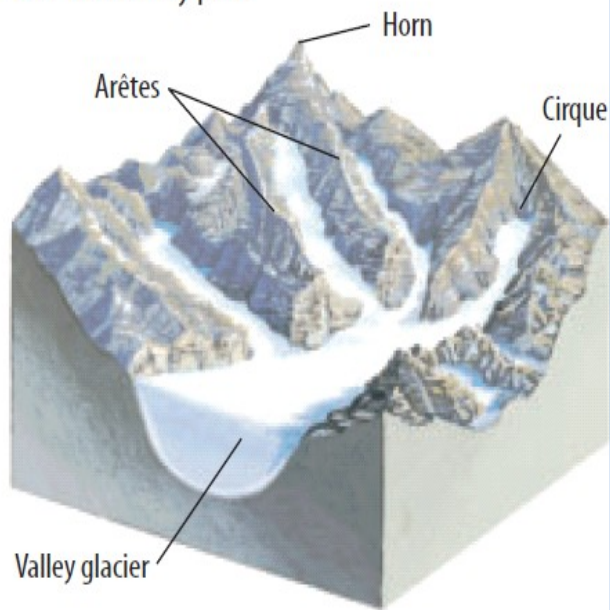
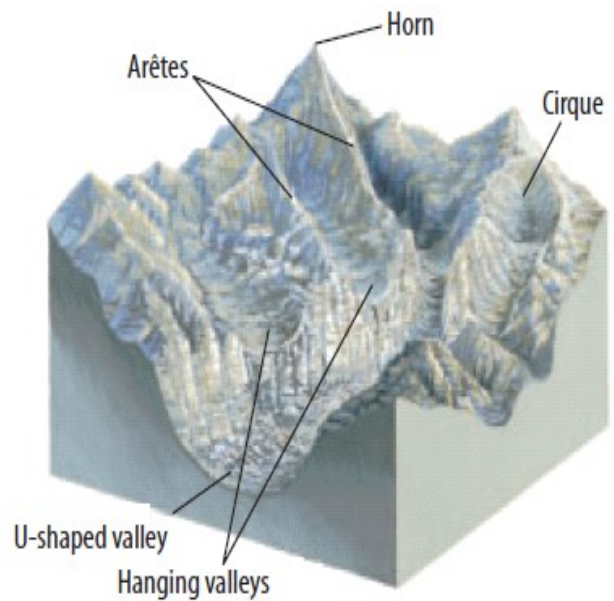


Figure 16 Valley glaciers transform the mountains over which they pass.



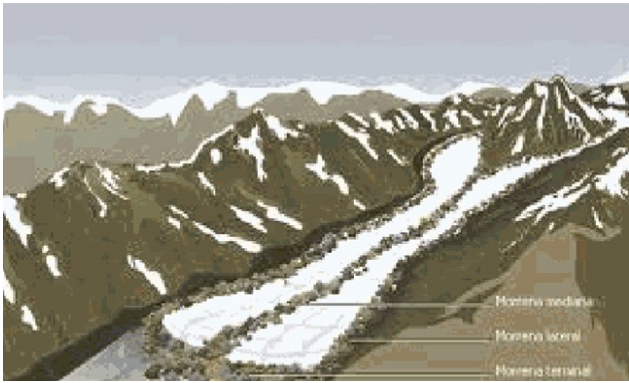
Bowl-shaped basins called cirques form by erosion at the start of a valley glacier. Arêtes form where two adjacent valley glaciers meet and erode a long, sharp ridge. Horns are sharpened peaks formed by glacial action in three or more cirques.



U-shaped valleys result when valley glaciers move through regions once occupied by streams. A tributary glacial valley whose mouth is high above the floor of the main valley is called a hanging valley. The discordance between the different valley floors is due to the greater erosive power of the trunk glacier.



Lengua glaciär



Morrenas laterales, central y frontal cuando el glaciar aun está instalado



Morrena lateral y de fondo una vez desaparecido el glaciar



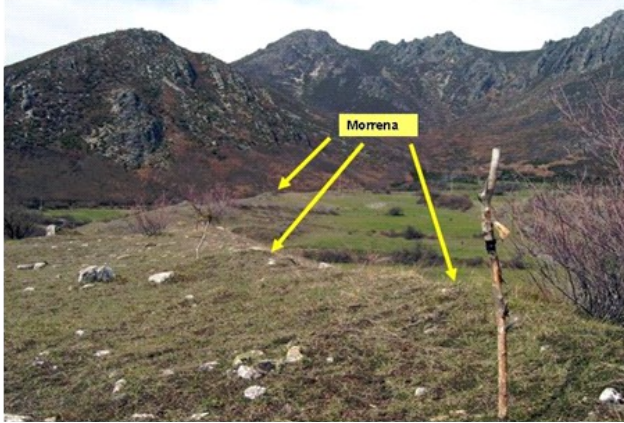
Morrena lateral y de fondo una vez desaparecido el glaciar



Morrenas centrales cuando el glaciar aún está instalado



Morrena central una vez desaparecido el glaciar



Morrena frontal una vez desaparecido el glaciar